

What is claimed is:

1. A spring brake actuator (6) for use in conjunction with a service brake actuator (3) having a rotational operative shaft (3'), the spring brake actuator (6) having an actuator shaft (11; 11A) in rotative communication with the service brake actuator shaft (3), characterized by

a clock spring or spiral spring (14; 14A), attached at its outer end to a spring brake actuator housing (10; 10A) and mechanically charged at a rotation of the actuator shaft (11; 11A) in a brake release direction,

an electric coil (15; 15A) for keeping - when electrically energized - the clock spring in its charged condition, and

transfer means (12, 24, 18-22; 12A, 18A, 30) for transferring the rotative energy of the clock spring to the actuator shaft in a brake applying direction, when the coil is deenergized, but allowing free rotation of the shaft in either direction, when the coil is energized.

2. A spring brake actuator according to claim 1, characterized in that the transfer means include

a cylindrical hub (12), which is rotationally arranged in relation to the shaft (11) and to which the inner end of the clock spring (14) is attached,

a locking spring (24) connecting the hub (12) with the shaft (11), and

control means (18-22) for controlling the operational condition of the locking spring in relation to the hub by means of the coil (15).

3. A spring brake actuator according to claim 2, characterized in that the control means (18-22) include in axial order

a brake disc (18) in proximity to the coil (15) and in splines engagement (at 19) with the hub (12), and

a control disc (22) in internal engagement with the locking spring (24).

4. A spring brake actuator according to any of the preceding claims, characterized in that the locking spring (24) is connected to the hub (12) by means of a sleeve (23) having a certain circumferential play in relation to the hub.

5. A spring brake actuator according to claim 4, characterized in that the sleeve (23) has a pin (23') engaging a circumferential groove in the hub (12).

6. A spring brake actuator according to claim 1, characterized in that the transfer means include

    a cylindrical hub (12A), which is rotationally arranged in relation to the shaft (11A) and to which the inner end of the clock spring (14A) is attached,

    an axially movable brake disc (18A) in splines engagement with the hub (12A), and

    a tooth clutch (30) between the actuator shaft (11A) and the brake disc, the clutch being engaged when the coil (15A) is not energized.

7. A spring brake actuator according to claim 6, characterized in that the tooth clutch (30) is spring biased into engagement.